

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1. (Currently Amended) A device for detection of magnetic permeability μ or, alternatively, relative magnetic permeability μ_r or, alternatively, relative magnetic susceptibility ($\mu_r - 1$) of a sample, ~~characterised in that it~~ wherein said device contains a sample chamber and at least two coils, said two coils surrounding said sample chamber and said sample chamber having at least one opening for introduction of a sample or a sample container holding a sample, said device also provided with an electronic circuit which measures the difference in inductance between the two coils.

Claim 2. (Currently Amended) A device as claimed in claim 1, ~~characterised in that~~ wherein each of said coils, when filled with air, has an inductance in the range of 0.01 to 100 μH .

Claim 3. (Currently Amended) A device as claimed in claim 1 ~~or 2~~, ~~characterised in that~~ wherein said sample chamber has a chamber volume in the range of 0.1 to 5000 μl .

Claim 4. (Currently Amended) A device as claimed in ~~any one of claims 1-3,~~
~~characterised in that~~ claim 1, wherein one of the coils is placed so as to be in thermal
contact by being physically connected to the material which constitutes the sample
chamber, but without surrounding the cavity of the sample chamber.

Claim 5. (Currently Amended) A device as claimed in ~~any one of claims 1-4,~~
~~characterised in that~~ claim 1, wherein the material of which the sample chamber is
made is a polymer, such as Delrin, POM, polyvinyl chloride, Teflon, polyamide,
polyacetal, polyethylene, polycarbonate, polystyrene, polypropylene, wood, glass, or
a metal with $0.999 < \mu_r > 1.001$.

Claim 6. (Currently Amended) A device as claimed in ~~any one of claims 1-5,~~
~~characterised in that~~ claim 1, wherein it is provided with an electronic circuit whose
output signal is proportional to the difference in inductance between said coils and to
the relative magnetic permeability of the sample material placed in one of the coils,
which is in the range of $0.0000001 < \mu_r < 10$.

Claim 7. (Currently Amended) A device as claimed in claim 6, ~~characterised~~
~~in that~~ wherein said electronic circuit is formed such that said coils are part of an
alternating current bridge.

Claim 8. (Currently Amended) ~~Use of the device as claimed in any one of claims 1-7, by~~ A process for interaction with magnetic markers, for detection of chemical substances with $\mu_r = 1$, exemplified by proteins, hormones, complement factors, bacteria, cells, viruses, fungi, yeast, spores, phages, cells, cell organelles, DNA, RNA, comprising the utilization of the device of claim 1.

Claim 9. (New) A device as claimed in claim 2, wherein said sample chamber has a chamber volume in the range of 0.1 to 5000 μl .

Claim 10. (New) A device as claimed in claim 2, wherein one of the coils is placed so as to be in thermal contact by being physically connected to the material which constitutes the sample chamber, but without surrounding the cavity of the sample chamber.

Claim 11. (New) A device as claimed in claim 3, wherein one of the coils is placed so as to be in thermal contact by being physically connected to the material which constitutes the sample chamber, but without surrounding the cavity of the sample chamber.

Claim 12. (New) A device as claimed in claim 9, wherein one of the coils is placed so as to be in thermal contact by being physically connected to the material which constitutes the sample chamber, but without surrounding the cavity of the sample chamber.

Claim 13. (New) A device as claimed in claim 2, wherein the material of which the sample chamber is made is a polymer, such as Delrin, POM, polyvinyl chloride, Teflon, polyamide, polyacetal, polyethylene, polycarbonate, polystyrene, polypropylene, wood, glass, or a metal with $0.999 < \mu_r > 1.001$.

Claim 14. (New) A device as claimed in claim 3, wherein the material of which the sample chamber is made is a polymer, such as Delrin, POM, polyvinyl chloride, Teflon, polyamide, polyacetal, polyethylene, polycarbonate, polystyrene, polypropylene, wood, glass, or a metal with $0.999 < \mu_r > 1.001$.

Claim 15. (New) A device as claimed in claim 4, wherein the material of which the sample chamber is made is a polymer, such as Delrin, POM, polyvinyl chloride, Teflon, polyamide, polyacetal, polyethylene, polycarbonate, polystyrene, polypropylene, wood, glass, or a metal with $0.999 < \mu_r > 1.001$.

Claim 16. (New) A device as claimed in claim 2, wherein it is provided with an electronic circuit whose output signal is proportional to the difference in inductance between said coils and to the relative magnetic permeability of the sample material placed in one of the coils, which is in the range of $0.0000001 < \mu_r < 10$.

Claim 17. (New) A device as claimed in claim 3, wherein it is provided with an electronic circuit whose output signal is proportional to the difference in inductance between said coils and to the relative magnetic permeability of the sample material placed in one of the coils, which is in the range of $0.0000001 < \mu_r < 10$.

Claim 18. (New) A device as claimed in claim 4, wherein it is provided with an electronic circuit whose output signal is proportional to the difference in inductance between said coils and to the relative magnetic permeability of the sample material placed in one of the coils, which is in the range of $0.0000001 < \mu_r < 10$.

Claim 19. (New) A device as claimed in claim 5, wherein it is provided with an electronic circuit whose output signal is proportional to the difference in inductance between said coils and to the relative magnetic permeability of the sample material placed in one of the coils, which is in the range of $0.0000001 < \mu_r < 10$.

Claim 20. (New) A process for interaction with magnetic markers, for detection of chemical substances with $\mu_r = 1$, exemplified by proteins, hormones, complement factors, bacteria, cells, viruses, fungi, yeast, spores, phages, cells, cell organelles, DNA, RNA, comprising the utilization of the device of claim 2.